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ADJUSTABLY INDUCING BIAXIAL STRAIN****Publication Classification**(75) Inventors: **Michael J. Vestel**, San Francisco, CA
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CA (US)(51) **Int. Cl.⁷** **G01D 1/16; G01D 7/02**(52) **U.S. Cl.** **73/789; 73/790**

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(57)

ABSTRACT

An apparatus comprising a shape memory alloy is configured as a ring shaped sample holder for a transmission electron microscope and imparts uniform biaxial strain on a thin film mounted within. The sample holder responds to a change in temperature by changing the inner diameter, which imparts biaxial strain. In other embodiments, the sample holder is configured to change the inner diameter and change the strain on a thin film reversibly and repeatedly. In further embodiments, the sample holder is non circular. In still further embodiments, the apparatus is configured as a prime mover of a reversible radial actuator. Methods for making and using the apparatus are included in other embodiments.

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